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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/510,396	10/05/2004	Cecilia Rydin	5848.180USWO	9967
23552	7590	05/31/2005	EXAMINER	
MERCHANT & GOULD PC P.O. BOX 2903 MINNEAPOLIS, MN 55402-0903			WU, IVES J	
			ART UNIT	PAPER NUMBER
			1713	
DATE MAILED: 05/31/2005				

Please find below and/or attached an Office communication concerning this application or proceeding.

**Office Action Summary**

Application No.

10/510,396

Applicant(s)

RYDIN ET AL.

Examiner

Ives Wu

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 17 May 2005.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-20 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-4 and 6-20 is/are rejected.
- 7) ☒ Claim(s) 5 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
  - ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)  
Paper No(s)/Mail Date 12/6/2004.
- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_\_.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: \_\_\_\_\_.

## DETAILED ACTION

### *Claim Objections*

Claims 2,3,6,8,13,15 are objected to under 37 CFR 1.75(c), as being of improper in view of the recitation of "**preferably**" in the claims. The use of the phrase "Preferably" to link a broad range of values with a narrow range of value renders the claims 2,3,6,8,13,15 to be vague. It is not clear which range controls the actual meter and bounds of the claimed subject matter.

It is suggested to cancel the claim(s), or amend the claim(s) to place the claim(s) in proper dependent form, or rewrite the claim(s) in independent form.

### *Claim Rejections - 35 USC § 103*

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

Claims 1-4, 6-20 are rejected under 35 U.S.C. 103(a) as being unpatentable over Hesse et al (US20030157286A1) in view of Baran et al (ISSN: 0322-7340), and further in view of Jarrin et al (US005218016A).

As to the component of  $\beta$ -**nucleated propylene polymer** in the composition of **independent claim 1**, Hesse et al (US20030157286A1) disclose that the polymers of compound B are selected from **propylene homopolymers with stereospecificity index > 98%** (equivalent to  $\beta$ -**nucleated propylene**), [0044], line 1-2.

As to the composition **melt flow rate** in **independent claim 1**, Hesse et al (US20030157286A1) disclose the resulting **propylene compound** has a **melt index of 0.38 g/10 min** in example 1, [0111].

As to the component of  $\beta$ -**nucleating agent** with **0.0001-2.0 wt%** in the composition of **independent claim 1**, Hesse et al (US20030157286A1) **teach using up to 3 wt% of nucleating agent** ( $\alpha$ -nucleating agent) in the composition, [0039], line 4-5.

Hesse et al (US20030157286A1) **do not use a  $\beta$ -nucleating agent** in the composition. However, it is well known in the art to add a  $\beta$ -nucleating agent to a propylene polymer such as taught by Baran. Baran et al (ISSN:0322-7340) **teach** the addition of a  $\beta$ -**nucleating agent: N,N' - dicyclohexyl -2,6-**

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**naphatalenedicarboxamide** in the **isotactic polypropylene** to improve the toughness of isotactic polypropylene by introducing more  $\beta$ -phase crystallinity, see abstract and the paragraph of introduction & experiment.

Therefore, it would have been obvious at the time of applicant's invention to use a  $\beta$ -nucleating agent taught by Baran into the Hesse's et al propylene polymer in order to achieve the advantage aforementioned, motivated by a reasonable expectation of success.

As to the **microsphere** component in the composition of **independent claim 1**, Hesse et al (US20030157286A1) **teach** using **fillers** as auxiliary substances, [0009].

Both Hesse et al (US20030157286A1) and Baran et al (ISSN:0322-7340) **do not teach** fillers to be microspheres in the  $\beta$ -nucleated propylene polymer.

However, Jarrin et al (US005218016A) **teach** using a new **filler**, Col. 1, line 10; to be hollow **microsphere** in the composition, Abstract, line 7.

The advantage of mixing the microsphere as filler in the propylene polymer is to resist against hydrostatic pressure, Abstract, line 7-9.

It would have been obvious at time of applicant's invention to modifying Hesse's et al teaching of polypropylene polymer and Baran's et al teaching of  $\beta$ -nucleating agent by adding jarrin's et al microspheres as filler in the composition because it will achieve the advantage aforementioned. Furthermore, the filler is taught as a genus in Hesse's et al, microsphere is disclosed as a species of the filler of Jarrin's et al, one of ordinary skill

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in the art would have expected all species work well for a genus, motivated by reasonable expectation of success, In re O'Farrell, 853 F.2d 894, 903, 7 USPQ2d 1673, 1681 (FED. Cir. 1988).

As to the composition to be a **syntactic polyolefin** in **independent claim 1**, in view of applicant's disclosure on page 1, line 25-26, it meets the definition of **syntactic polyolefin** composition by the combination of Hesse's et al teaching and Jarrin's et al teaching.

As far as the elongation at least 3% is concerned, in view of substantially identical polypropylene compound materials disclosed by the references, it is examiner's position to believe that the composition disclosed by combination of Hesse's et al polypropylene polymer, Jarrin's et al microspheres and Baran's et al  $\beta$ -nucleating agent must inherently possess the same elongation percentage. Since the PTO does not have proper means to conduct experiments, the burden of proof is now shifted to the applicant to establish an unobviousness difference. In re Best, 562 F.2d 1252, 195 USPQ 430 ((CCPA 1977).

As to the limitation of **dependent claim 2**, Hesse's et al (US20030157286A1) disclose the resulting modified propylene polymer A) with a melt index **0.52g/10min** at 230°C/2.16 kg in example 2, [0121].

As to the limitation of **dependent claim 3**, in view of substantially identical polypropylene compound materials disclosed by the references, it is examiner's position to believe that the composition disclosed by combination of Hesse's et al polypropylene

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polymer, Jarrin's et al microspheres and Baran's et al  $\beta$ -nucleating agent must inherently possess the same elongation percentage. Since the PTO does not have proper means to conduct experiments, the burden of proof is now shifted to the applicant to establish an unobviousness difference. In re Best, 562 F.2d 1252, 195 USPQ 430 ((CCPA 1977).

As to the limitation of **dependent claim 4**, Hesse et al (US20030157286A1) disclose a copolymers from **80.0 – 99.9 wt%** of **propylene** and **0.1 – 20 wt%** of **ethylene** or  $\alpha$ -**olefins** with **4 – 18 carbon atoms** with a stereospecificity index of propylene homopolymer matrix of > 96% and a **melt index** of **0.1 – 10 g/10min** at 230 °C./2.16 kg, [0080].

As to the limitation of **dependent claim 6**, Hesse et al (US20030157286A1) disclose a compound with **5 – 80 wt%** which is selected from modified propylene polymers, [0079], line 1-2.

As to the limitation of **dependent claim 7**, Hesse et al (US20030157286A1) disclose **Tensile module** according to **ISO 527**, [0100]; a tensile modulus of **1740 Mpa**, [0111].

As to the limitation of **dependent claim 8**, Hesse et al (US20030157286A1) disclose that the Compression strength at 5% compression of the samples was **determined according to ASTM D695-96**, [0135]; results of the compression are tabulated in paragraph [0136], they are **> 10 Mpa**.

As to the limitation of **dependent claim 9**, Hesse et al (US20030157286A1) disclose the K-values results of samples in paragraph [0136], they are **< 0.190 W/m°K**.

As to the limitation of **dependent claim 10**, Hesse et al (US20030157286A1) disclose the density of samples in paragraph [0136], they are between **500 - 850 kg/m3**.

As to the limitation of **dependent claim 11**, Jarrin et al (US005218016A) disclose **glass microsphere**, Col. 4 line 40.

As to the limitation of **dependent claim 12**, Jarrin et al (US005218016A) disclose the **naturally occurring micromarbles** which are marked under the name of "flying ashes" and which come from a sifting of recovery soot in chimney dust collector, Col. 4, line 43-46.

As to the limitation of **dependent claim 13**, Jarrin et al (US005218016A) disclose that the granulometric distribution will be such that 80 % weight of the particles will be smaller than 1 mm and the average size of the particles will range from **200 – 600 μm**, Col. 4, line 36-39.

As to the limitation of **dependent claim 14**, Jarrin et al (US005218016A) disclose **hollow** glass microspheres, Col. 4, line 40.



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As to the limitation of **dependent claim 15**, Jarrin et al (US005218016A) disclose a **33 wt%** of microspheres are used in example 1, Col. 5, line 23-27.

As to the limitation of **dependent claim 16**, Hesse et al (US20030157286A1) disclose a **method** as cited: step c) the heating and **melting** the particulate polyolefin composition in an atmosphere comprising inert gas and/or the volatile bifunctional monomers from sorption temperature to 210 °C, whereupon the free-radical generators capable of thermal decomposition are decomposed and then d) heating and **melt** up to 280 °C. in order to remove unreacted monomers and decomposition products, e) agglomerating the melt in a manner known per se, [0036] – [0038]. Usually amount of **auxiliary substances** may be added before step e) of the method and/or before or **during** the step c) **and/or step d)** of the above described method, [0039]. The auxiliary substances disclosed by Hesse et al (US20030157286A1) are stabilizer and/or processing aids and/or antistats and/or pigments and/or nucleating agents and/or fillers as auxiliary substances, [0009].

As to the limitation of **dependent claim 17**, Hesse et al (US20030157286A1) disclose as cited: Usually amount of **auxiliary substances** may be added before step e) of the method and/or before or **during** the step c) **and/or step d)** of the above described method, [0039]; 0.1 wt% of calcium stearate and 0.05 wt% of hydrotalcit is **added to the melt and homogenized**, [0104] of example 1.

As to the limitation of **dependent claim 18**, Hesse et al (US20030157286A1) disclose as cited: The process for producing the modified propylene polymer preferably is **a continuous method**, performed in continuous reactors, mixers, kneaders and extruders. [0041]; also see example 1, [0104].

As to the limitation of **dependent claim 19**, Hesse et al (US20030157286A1) disclose as cited: Then the pelletization of the melt follows, [0104], line 20; see example 2 in [0128], [0129] which demonstrates the subsequent step of extruding the modified propylene polymer mixture as a coating on pipe.

As to the limitation of **dependent claim 20**, Hesse et al (US20030157286A1) disclose that the polyolefin foam pipes are coated steel pipes for transporting crude oil, or gas products, single layer pipes for insulation purpose, Abstract. Furthermore, Jarrin's et al (US005218016A) disclose as cited: a technical sector where the invention can especially apply is that of integrated floatability materials in the assemblies of cables and/or tubes with large diameters and used in **underwater** oil applications, especially in bottom-surface links at marine depth greater than 100 m.

### ***Allowable Subject Matter***

Claim 5 is objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims for the following reasons: a polyolefin homopolymer having a melt flow rate of **100-1500** g/10 min at 230 °C/2.16 Kg is used in a syntactic

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polyolefin composition for a better **homogenous mixing** with auxiliary substances such as glass microspheres, the result polymer product will have physical properties such as tensile, impact strength, density in the same range required for the coating application as disclosed in the prior arts which does not use same high MFR of a polyolefin homopolymer.

### **Conclusion**


Any inquiry concerning this communication or earlier communications from the examiner should be directed to Ives Wu whose telephone number is 571-272-1114.

The examiner can normally be reached on 8:00 - 5:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, David Wu can be reached on 571-272-1114. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Examiner: Ives Wu

  
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Date: May 26,2005